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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			VUONG, JASON DUY ANH	
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			2626	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/851,099	Applicant(s) CHANG, CHIN	
	Examiner Jason D. A. Vuong	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-13 is/are rejected.
- 7) ☒ Claim(s) 6, 7, and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign mentioned in the description: **a primary color identification system 10** (first appears on page 6 line 5 of the specification). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: numerous typographical errors. For example, Page 2 Line 6 of the specification contains the phrase "tocalibrate".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claim 2** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding **Claim 2**, the specification does not show or provide support for the Processor's capability of generating test signals (cited in **Claim 2**). The specification only shows the Reference Signal Generator (Figure 1 Element 22) that is capable of generating the test signals, not the Processor (Figure 1 Element 26). Thus, the specification does not disclose how the processor is supposed to generate the "test signals" nor what they would be based upon. Without these details, one of ordinary skill in the art would have been burdened by undue experimentation to make or use the claimed invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 9** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is considered as being indefinite and unclear because it contains the phrase "steps (a) and (b)"; Steps (a) and (b) are not defined. It is unclear what step (a) and step (b) are.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. **Claims 1, 2, 3, 4, 5, 9, 11 and 12** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,127,783 to Pashley et al.

Regarding **Claim 1**, Pashley et al. disclose a white light emitting control system capable of adjusting the individual components to maintain a desired color balance.

The system comprising:

a photodiode located near the LEDS (see Figure 2 Element 24), so as to receive the combined light generated by the RGB LEDs (this is equivalent to the claimed filter because it is capable of receiving the combined light generated by the RGB LEDs);

said filter configured to provide signals corresponding to light received from each of said red, green and blue LEDS (refer to Column 2 Lines 36-40);

said signals provided by said filter enabling measurement of chromaticity coordinates of said combined light (refer to Column 2 Lines 45-48);

a processor (controller) coupled to said filter and configured to receive said signals provided by said filter (see Figure 2 Element 30);

said processor (controller) further configured to generate control signals associated with each one of said plurality of red, green and blue LEDs, such that a desired light intensity from each of said LEDs is provided (refer to Column 2 Lines 48-54);

a driver circuit coupled to said processor to receive said control signals (see Figure 2 Elements 11, 13, and 15), said driver circuit further coupled to said

plurality of red, green and blue LEDs and configured to provide drive signals enabling said LEDs to produce said desired light intensity (refer to Column 2 Lines 50-54).

Regarding **Claim 2**, Pashley et al. disclose a controller capable of generating and measuring test signal sequences according to user adjustment (refer to Column 2 Lines 60-65).

Regarding **Claim 3**, Pashley et al. disclose a processor (controller, Figure 3 Element 30) that is capable of generating at least three sets of control signals so that the LEDs produce at least three desired light intensity values in a sequential order (refer to Column 3 Lines 9-19).

Regarding **Claim 4**, Pashley et al. disclose a photodiode (Figure 1 Element 24) that is capable of measuring light intensity values corresponding to each one of the RGB LEDs (refer to Column 3 Lines 11-16).

Regarding **Claim 5**, Pashley et al. disclose a feedback control circuit designed to track and maintain the light intensity values (see Figure 2 Element 26 OPTICAL FEEDBACK).

Regarding **Claim 9**, Pashley et al. disclose a method for identifying color coordinates of a plurality of red, green and blue light sources that together generate a combined light, said method comprising the steps of:

setting the intensity of each of said red, green and blue light sources at a specified test level (the user can set the intensity values through the user control interface. Refer to Column 2 Lines 45-48, and Figure 2 Element 40);
measuring the color chromaticity coordinates of the combined light (refer to Column 2 Lines 45-48);
repeating the measurements (refer to Column 2 Line 67) of color coordinates of the combined light (refer to Column 2 Lines 36-37), wherein each of the color coordinates of the combined light correspond to a different set of test signals for each of the red, green and blue light sources (different intensity levels can be set by the user. Refer to Column 2 Lines 56-59);
measuring primary color coordinates of each of the red, green and blue light sources (refer to Column 3 Lines 9-19).

Regarding **Claim 11**, Pashley et al. disclose a step for calculating the light intensity values needed to obtain the desired combined light (refer to Column 2 Lines 45-54).

Regarding **Claim 12**, Pashley et al. disclose a feedback arrangement for maintaining light intensity values for each of the RGB LEDs (see Figure 2 Element 26).

6. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,510,995 B2 to Muthu et al.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding **Claim 1**, Muthu et al. disclose an RGB LED based control system that measures color chromaticity coordinates of a plurality of red, green and blue light emitting diodes (LEDs) that generate a combined light (see Figure 1), said system comprising:

a photodiode located near said LEDS (see Figure 1 Element 40), so as to receive said combined light generated by said red, green and blue LEDs (this is equivalent to the claimed filter because it is capable of receiving the combined light generated by the RGB LEDs);

said filter configured to provide signals corresponding to light received from each of said red, green and blue LEDS (see Figure 1 Element 40, and also refer to Column 4 Lines 12-16);

said signals provided by said filter enabling measurement of chromaticity

coordinates of said combined light (see Figure 1 Element 40, and also refer to Column 4 Lines 12-17);

a processor coupled to said filter and configured to receive said signals provided by said filter (see Figure 1 Element 50);

said processor further configured to generate control signals associated with each one of said plurality of red, green and blue LEDs, such that a desired light intensity from each of said LEDs is provided (refer to Column 4 Lines 16-20);

a driver circuit coupled to said processor to receive said control signals (see Figure 1 Elements 30, 31, and 32), said driver circuit further coupled to said plurality of red, green and blue LEDs and configured to provide drive signals enabling said LEDs to produce said desired light intensity (see Figure 1 Elements 30, 31, and 32, and also refer to Column 3 Lines 13-19 and Column 4 Lines 34-38).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 10 and 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,127,783 to Pashley et al. in view of U.S. Patent No. 4,256,131 to De Remigis.

Regarding **Claim 10**, Pashley et al. disclose a method for identifying color coordinates of a plurality of red, green, and blue light sources that together generate a combined light. The method comprises: setting the intensity of each of the red, green, and blue light sources at a specified test level, repeating the measurements, and measuring primary color coordinates of each of the red, green, and blue light sources (refer to the rejection of **Claim 9** above). Pashley et al. disclosed do not disclose a tristimulus filter or sensor in their invention.

However, De Remigis discloses a tristimulus sensor (see Figure 3 Element 42, and also refer to Column 4 Lines 43-47. This tristimulus sensor is equivalent to the claimed tristimulus filter because it is capable of measuring the reflected light and producing XYZ signals representing RGB components.).

Therefore it would have been obvious to one skilled in the art to combine Pashley et al.'s features (setting the intensity of the RGB light sources, repeating the measurements, and measuring primary color coordinates of the RGB light sources) with a tristimulus filter (as disclosed by De Remigis). The motivation to do so is to reduce cost and space. Cost is reduced by using just one tristimulus filter instead of using three separate filters (red, green, and blue filters); it would also take less space to physically mount one tristimulus filter than three filters.

Regarding **Claim 13**, Pashley et al. disclose a method for identifying color coordinates of a plurality of red, green, and blue light sources that together generate a combined light. The method comprises: setting the intensity of each of the red, green, and blue light sources at a specified test level, repeating the measurements, measuring primary color coordinates of each of the red, green, and blue light sources, and calculating the light intensity values needed to obtain the desired combined light (refer to the rejections of **Claims 9 and 11** above). Pashley et al. do not disclose the claimed equations cited in **Claim 13**.

De Remigis, however, discloses these two equations (refer to Column 2 Line 68, Equation 4, and Column 3 Line 2, Equation 5). It is also clear and well known in the art that the two equations (cited in **Claim 13**) come from the 1931 CIE recommendations.

Therefore it would have been obvious to one skilled in the art to combine Pashley et al.'s features (setting the intensity of the RGB light sources, repeating the measurements, measuring primary color coordinates of the RGB light sources, and

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calculating the light intensity values) with the two equations disclosed by De Remigis.

The motivation to use these equations to measure the intensity values of the light is to follow the well-known standards as defined by the CIE. The XYZ and LAB values are well known and expected to define color unambiguously.

8. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,127,783 to Pashley et al. in view of U.S. Patent No. 4,256,131 to De Remigis.

Regarding **Claim 8**, Pashley et al. disclose the claimed features of **Claim 1** (refer to the rejection of **Claim 1** above) but fail to disclose a tristimulus filter or sensor.

However, De Remigis discloses a tristimulus sensor (see Figure 3 Element 42, and also refer to Column 4 Lines 43-47. This tristimulus sensor is equivalent to the claimed tristimulus filter because it is capable of measuring the reflected light and producing XYZ signals representing RGB components.).

Therefore it would have been obvious to one skilled in the art to combine Muthu et al.'s features (RGB LED control and measurement system) with a tristimulus filter (as disclosed by De Remigis). The motivation to do so is to reduce cost and space. Cost is reduce by using just one tristimulus filter instead of using three separate filters (red, green, and blue filters); it would also take less space to physically mount one tristimulus filter than three filters.

Allowable Subject Matter

9. **Claims 6, 7 and 14** are allowable.
10. **Claims 6, 7 and 14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. The following is a statement of reasons for the indication of allowable subject matter: the current invention discloses a unique method for calculating the color coordinates of RGB LEDs.

Claim 6 cites the calculation of the color coordinates of the RGB LEDs based on an equation [equation (12) disclosed in the Specification].

Claim 7 cites the condition of an equation [equation (13) disclosed in the Specification].

Claim 14 also cites the calculation of the color coordinates of the RGB LEDs based on an equation [equation (12) disclosed in the Specification].

Such features in combination with other elements of the claims are not disclosed or suggested by the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications should be directed to Jason Vuong at 703-306-4157. The examiner can normally be reached on Monday-Friday from 8:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's trainer, Joseph Mancuso can be reached at 703-305-3885.


KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER